

CLAIMS

1. A coated cutting tool equipped with a substrate and a coating formed on said substrate, wherein:

5 said coating includes: a compound formed from elements Al and/or Cr and at least one element selected from a group consisting of carbon, nitrogen, oxygen, and boron; and chlorine.

2. A coated cutting tool according to claim 1 wherein a thickness of said coating is at least 0.05 microns and no more than 20 microns.

10 3. A coated cutting tool according to claim 1 wherein a concentration of said chlorine in said coating is at least 0.0001 percent by mass and no more than 1 percent by mass.

4. A coated cutting tool according to claim 1 wherein said coating includes a cubic crystal structure.

15 5. A coated cutting tool according to claim 1 wherein said substrate is a cemented carbide, a cermet, a high-speed steel, a ceramic, a cubic boron nitride sintered body; a diamond sintered body; a silicon nitride sintered body; or a mixture of aluminum oxide and titanium carbide.

6. A coated cutting tool according to claim 1 wherein said coated cutting tool is
20 a drill, an end mill, an indexable insert for drills, indexable insert for end mills, an indexable insert for milling, an indexable insert for turning, a metal saw, a gear cutting tool, a reamer, or a tap.

7. A coated cutting tool equipped with a substrate and a coating formed on said

substrate, wherein:

said coating includes: a compound formed from elements Al and/or Cr, at least one element selected from a group consisting of a group IVa element, a group Va element, a group VIa element, and Si, and at least one element
5 selected from a group consisting of carbon, nitrogen, oxygen, and boron; and chlorine.

8. A coated cutting tool according to claim 7 wherein a thickness of said coating is at least 0.05 microns and no more than 20 microns.

9. A coated cutting tool according to claim 7 wherein a concentration of said
10 chlorine in said coating is at least 0.0001 percent by mass and no more than 1 percent by mass.

10. A coated cutting tool according to claim 7 wherein said coating includes a cubic crystal structure.

11. A coated cutting tool according to claim 7 wherein said substrate is a
15 cemented carbide, a cermet, a high-speed steel, a ceramic, a cubic boron nitride sintered body; a diamond sintered body; a silicon nitride sintered body; or a mixture of aluminum oxide and titanium carbide.

12. A coated cutting tool according to claim 7 wherein said coated cutting tool is a drill, an end mill, an indexable insert for drills, indexable insert for end
20 mills, an indexable insert for milling, an indexable insert for turning, a metal saw, a gear cutting tool, a reamer, or a tap.

13. A coated cutting tool equipped with a substrate and a coating formed on said substrate, wherein:

said coating is formed from at least two coating layers;

a first layer of said coating layers contains a compound formed from elements Al and/or Cr and at least one element selected from a group consisting of carbon, nitrogen, oxygen, and boron;

- 5 a second layer of said coating layers contains a compound formed from: at least one element selected from a group consisting of a group IVa element, a group Va element, a group VIa element, and Si; and at least one element selected from a group consisting of carbon, nitrogen, oxygen, and boron; and at least one of said coating layers contains chlorine.

10 14. A coated cutting tool according to claim 13 wherein said coating includes a third layer in addition to said first layer and said second layer, said third layer containing chlorine.

15. A coated cutting tool according to claim 13 wherein a thickness of said coating is at least 0.05 microns and no more than 20 microns.

15 16. A coated cutting tool according to claim 13 wherein a concentration of said chlorine in said coating is at least 0.0001 percent by mass and no more than 1 percent by mass.

17. A coated cutting tool according to claim 13 wherein said coating includes a cubic crystal structure.

20 18. A coated cutting tool according to claim 13 wherein said substrate is a cemented carbide, a cermet, a high-speed steel, a ceramic, a cubic boron nitride sintered body; a diamond sintered body; a silicon nitride sintered body; or a mixture of aluminum oxide and titanium carbide.

19. A coated cutting tool according to claim 13 wherein said coated cutting tool is a drill, an end mill, an indexable insert for drills, indexable insert for end mills, an indexable insert for milling, an indexable insert for turning, a metal saw, a gear cutting tool, a reamer, or a tap.